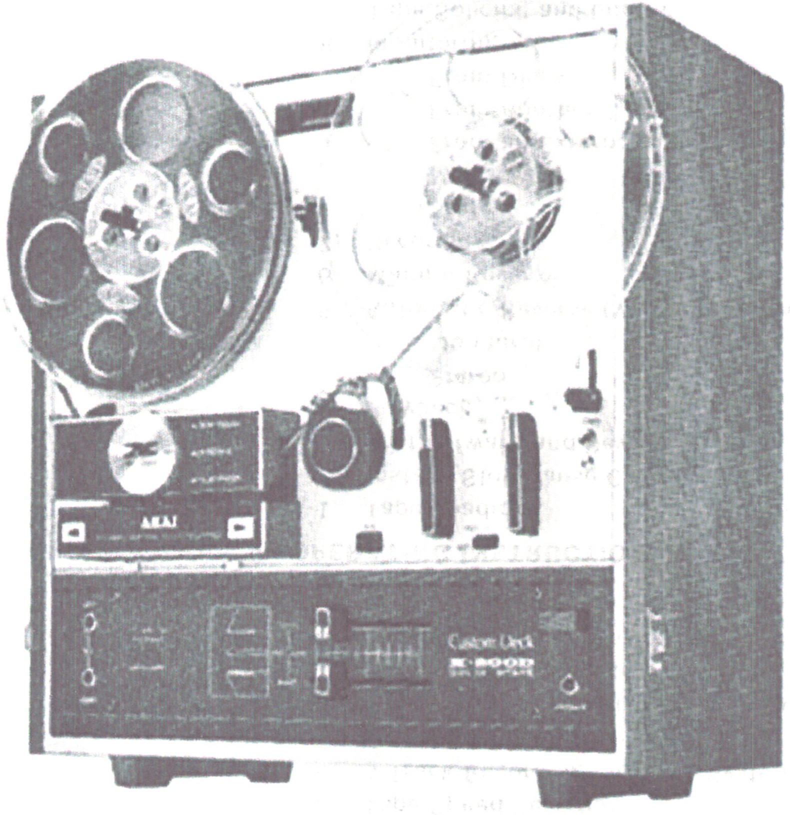
For the best performance...


AKAI
Custom Deck
X-200D

AKAI
X-200D

OPERATOR'S MANUAL

THREE MOTORS
AUTO. REVERSE
CUSTOM DECK

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IV SCHEMATIC

1. SPECIFICATIONS

Tape Speed : 1-7/8, 3-3/4 and 7-1/2 ips

Wow and Flutter : Less than 0.08% RMS at 7-1/2 ips
Less than 0.12% RMS at 3-3/4 ips
Less than 0.20% RMS at 1-7/8 ips

Frequency Response : 30 to 26,000 Hz ±3 db at 7-1/2 ips
30 to 19,000 Hz ±3 db at 3-3/4 ips
30 to 9,000 Hz ±3 db at 1-7/8 ips

Signal to Noise Ratio : Better than 50 db

Input Level : Mic ………………………… more than 0.5 mV
Line ………………………… more than 50 mV
DIN ………………………… more than 5 mV (LOW)
more than 50 mV (HIGH)

Output Level : Line ………………………… 0 VU (1.23 V)
DIN ………………………… 0.4 V

Equalization : Correct equalization for playback of tapes recorded to the NAB curve.

Recording Bias Frequency : 100 KHz

Recording Level Indicator : Twin type VU meter

Recording System : 4-track stereo/monaural, CROSS-FIELD bias system

Fast Forward and Rewind Time :
75 seconds using 1,200 foot tape at 50 Hz.
60 seconds at 60 Hz.

Recording Capacity : 8 hours monaural recording at 1-7/8 ips (1,200 foot tape). 4 hours stereo recording at 1-7/8 ips

Maximum Reel Size : 7" reel

Head : 3 heads....Erase, record/playback and bias heads

Motor : 3 motors....Hysteresis synchronous 3-speed motor for capstan drive. Two out-rotor motors for supply and take-up reel drive

Transistor : 14 transistors

IC : 2 IC

Power Supply : AC 220 V, 50 Hz

Power Consumption : 100 W

Dimensions : 14" × 14" × 8-7/8" (358 × 358 × 227 mm)

Weight : 37.4 lbs (17 kg)

2. CONTROLS

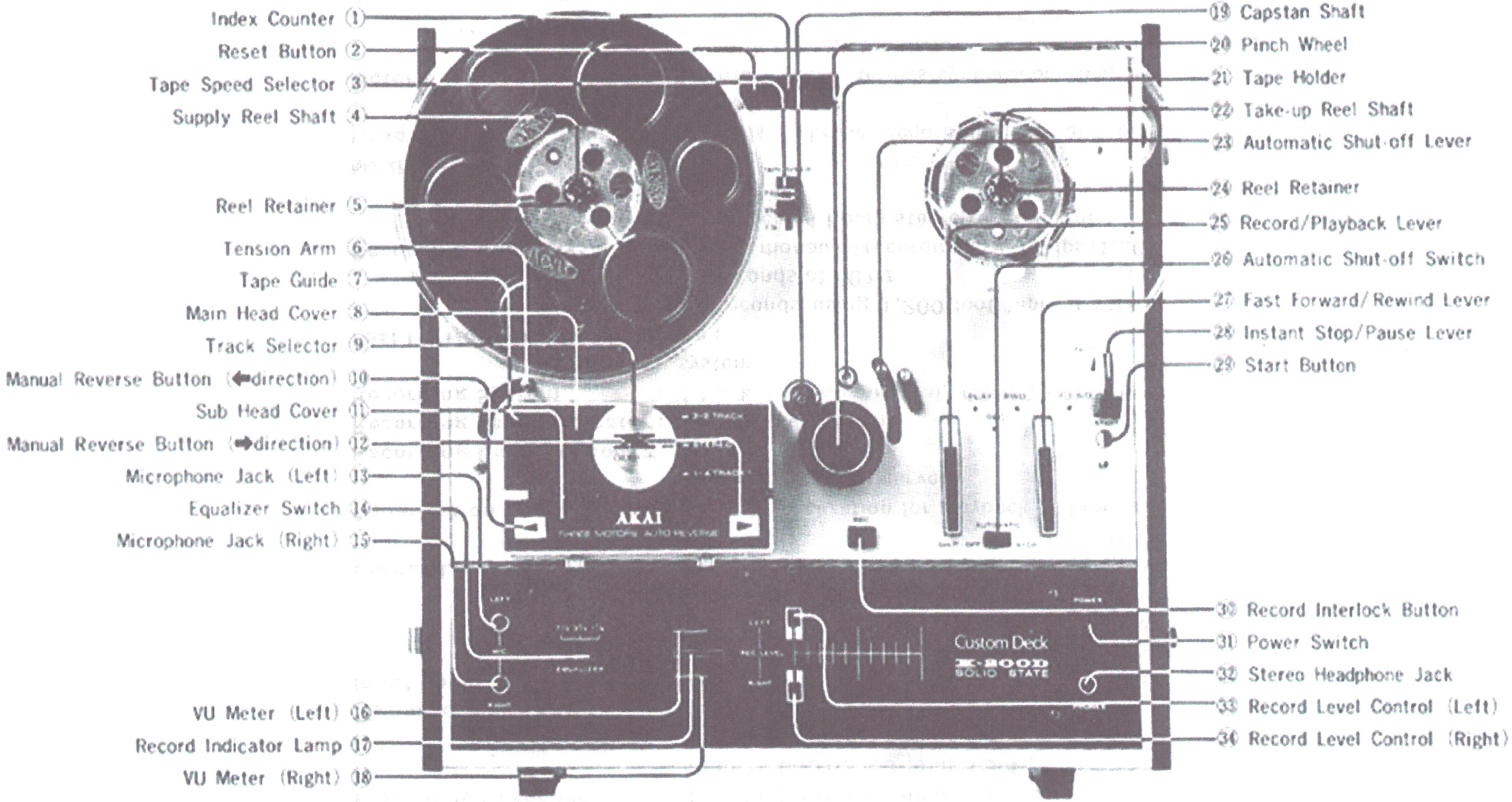

Index Counter ①
Reset Button ②
Tape Speed Selector ③
Supply Reel Shaft ④
Reel Retainer ⑤
Tension Arm ⑥
Tape Guide ⑦
Main Head Cover ⑧
Track Selector ⑨
Manual Reverse Button (⬅direction) ⑩
Sub Head Cover ⑪
Manual Reverse Button (➡direction) ⑫
Microphone Jack (Left) ⑬
Equalizer Switch ⑭
Microphone Jack (Right) ⑮
VU Meter (Left) ⑯
Record Indicator Lamp ⑰
VU Meter (Right) ⑱
⑲ Capstan Shaft
⑳ Pinch Wheel
㉑ Tape Holder
㉒ Take-up Reel Shaft
㉓ Automatic Shut-off Lever
㉔ Reel Retainer
㉕ Record/Playback Lever
㉖ Automatic Shut-off Switch
㉗ Fast Forward/Rewind Lever
㉘ Instant Stop/Pause Lever
㉙ Start Button
㉚ Record Interlock Button
㉛ Power Switch
㉜ Stereo Headphone Jack
㉝ Record Level Control (Left)
㉞ Record Level Control (Right)
AKAI
THREE MOTORS AUTO REVERSE
Custom Deck
X-200D
SOLID STATE
POWER
PHONES
LEFT
RIGHT
REC LEVEL

Fig. 1

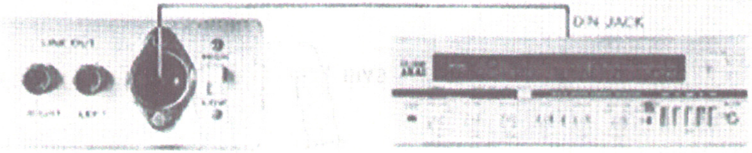

DIN JACK
LINE OUT
RIGHT
LEFT
HIGH
LOW

Fig. 6

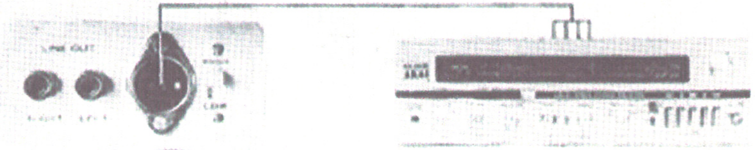

LINE OUT
HIGH
LOW

Fig. 7

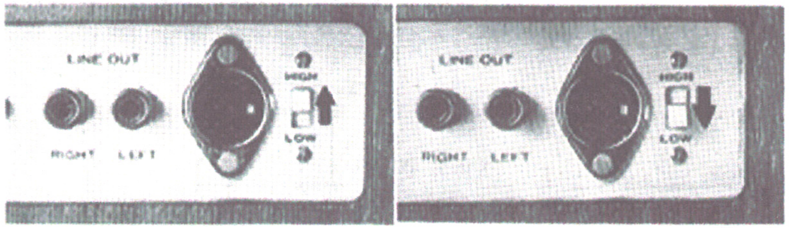

LINE OUT
RIGHT
LEFT
HIGH
LOW
LINE OUT
RIGHT
LEFT
HIGH
LOW

Fig. 8

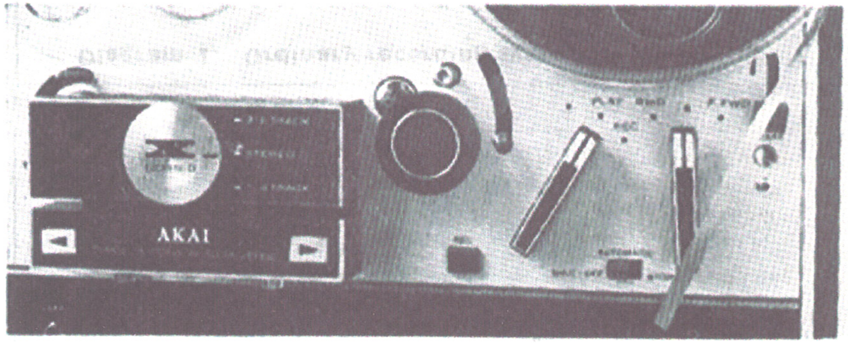
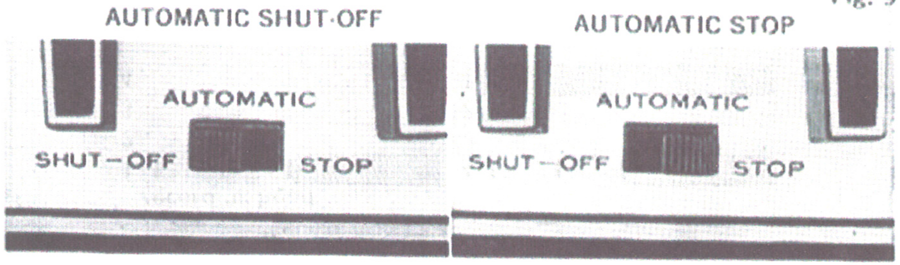


Fig. 9


AUTOMATIC SHUT-OFF

AUTOMATIC STOP

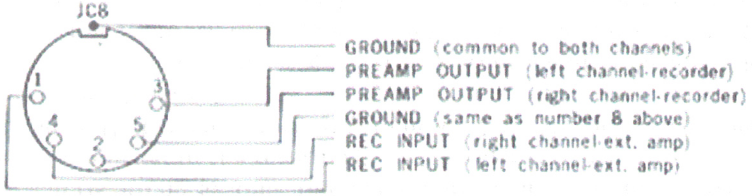
AUTOMATIC
SHUT-OFF
STOP
AUTOMATIC
SHUT-OFF
STOP

Fig. 10

6. DIN (ONE MULTIPLE-CONNECTION) JACK

A DIN JACK is provided at the left side of Model X-200D, and is used for interconnecting Model X-200D with an external stereo amplifier, with the same connection jack. This system permits easy recording and playback of stereo programs through an external stereo amplifier, as the complex connection or disconnection of 4 separate plugs from Model X-200's side panel is avoided.

If your amplifier is not equipped with the DIN Jack and the use of this one connection system is required, AKAI DR-110 can be used.


JC8
1
2
3
4
5
GROUND (common to both channels)
PREAMP OUTPUT (left channel-recorder)
PREAMP OUTPUT (right channel-recorder)
GROUND (same as number 8 above)
REC INPUT (right channel-ext. amp)
REC INPUT (left channel-ext. amp)

Front View of DIN JACK

NOTE:

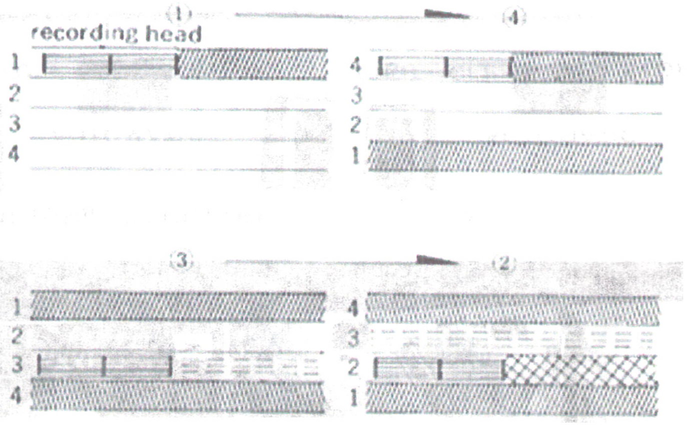
When the output level of an external amplifier is more than 50 mV, set the HIGH/LOW INPUT SELECTOR to "HIGH".

But, when output level is more than 5 mV, set it to "LOW".

7. AUTOMATIC STOP/SHUT-OFF

For Automatic Stop, set switch to "STOP" position. When the tape comes to the end or is accidentally broken, the AUTOMATIC SHUT-OFF LEVER drops and reel movement is stopped.

For Automatic Shut-Off, set switch to "SHUT-OFF" position. When the tape comes to the end or is accidentally broken, the AUTOMATIC SHUT-OFF LEVER drops and the power is cut off



4-TRACK MONAURAL RECORDING/PLAYBACK

Monaural recording/playback track sequence should be 1-4-3-2.

(A) Set the TRACK SELECTOR to "1-4". The first monaural recording/playback occurs on track 1, and the second on track 4 after the reels have been inverted.

(B) Invert the reels.

(C) Set the TRACK SELECTOR to "3-2".
The third monaural recording/playback occurs on track 3, and the fourth on track 2 after the reels have been inverted.

The X-200D does not record in the reverse direction. Using reverse playback, it is not necessary to turn the tape reels over. When the X-200D begins reverse playback, the record/playback head is automatically shifted to the remaining tracks.

5. CROSS-FIELD HEAD

AKAI's exclusive cross-field head has created a sensation in the tape recorder world by offering a wide recording range which has never been duplicated.

Using this cross-field head, Model X-200D provides a surprising recording performance (30 26,000 Hz±3 db at a tape speed of 7-1/2 ips.)

Why is cross-field recording superior? How does it differ from conventional recording methods?

In the typical recording system, the signal current and the bias current are combined and applied to the recording head. (Diagram 1.)

It is well known that the bias current is to minimize distortion while maintaining a proper sensitivity ratio.

However, the bias current providing such an advantage also has an undesirable effect. That is, the wide magnetic field of the bias current affects the recorded signal, resulting in the weakening or even erasing of the signal.

This is particularly noticeable at high frequencies. In the cross field system, the signal current is applied to the recording head while the bias current is applied to the bias head.

These two heads are positioned inter-relatively, so that the magnetic field of the bias will not affect the signal recorded on the tape, even when maximum bias is applied. This permits recording with high fidelity even at low speeds.

Diagram 1. Ordinary recording system

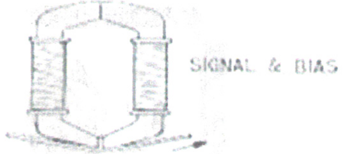
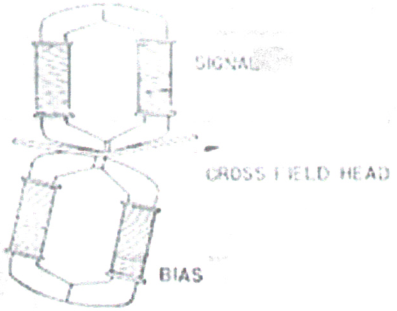


Diagram 2. Cross-field recording system



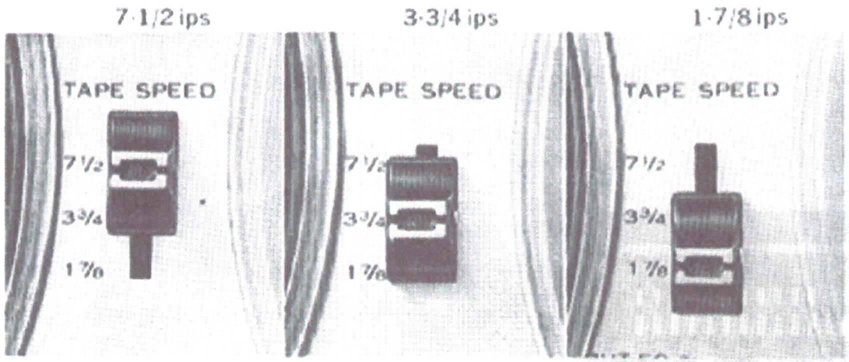

7-1/2 ips
3-3/4 ips
1-7/8 ips
TAPE SPEED
7 1/2
3 3/4
1 7/8

Fig. 4

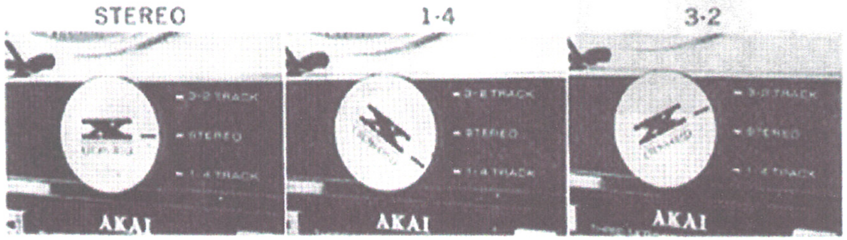
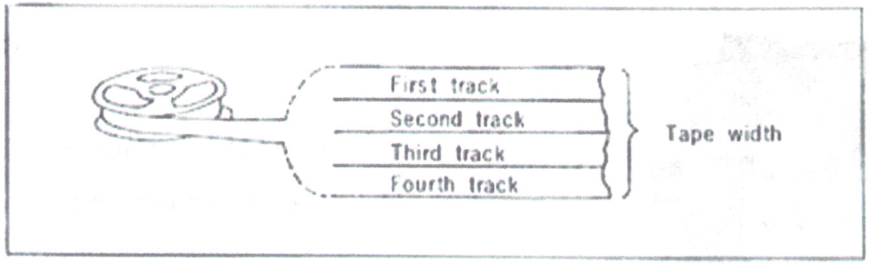
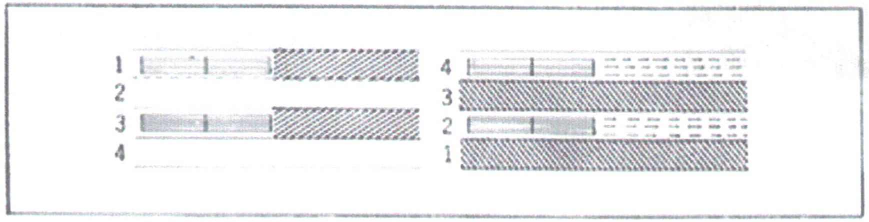

STEREO
1-4
3-2
3-2 TRACK
STEREO
1-4 TRACK
AKAI

Fig. 5


First track
Second track
Third track
Fourth track
Tape width



3. TAPE SPEED SELECTION

The X-200D operates on 3 tape speeds, 7-1/2, 3-3/4 and 1-7/8 ips.
Refer to the chart for selection of an adequate tape speed.

- * 1-7/8 ips ·········The 1-7/8 ips tape speed is obtained by setting the TAPE SPEED SELECTOR to "1-7/8".
- * 3-3/4 ips ·········The 3-3/4 ips tape speed is obtained by setting the TAPE SPEED SELECTOR to "3-3/4".
- * 7-1/2 ips ·········The 7-1/2 ips tape speed is obtained by setting the TAPE SPEED SELECTOR to "7-1/2".

Important: In each case, set Equalizer Switch to consistent speed.

RECORDING TIME

4-TRACK STEREO			
TAPE LENGTH	TAPE SPEED		
	1-7/8 ips	3-3/4	7-1/2
1200 ft	4 hrs	2	1
1800	6	3	1.5
2400	8	4	2
4-TRACK MONO			
1200	8	4	2
1800	12	6	3
2400	16	8	4

4. 4-TRACK RECORDING/PLAYBACK SYSTEM

The AKAI X-200D employs a four track system which can be used for either stereo or monaural recording/playback. The desired track or tracks are selected by the TRACK SELECTOR.

4-TRACK STEREO RECORDING/PLAYBACK

Stereo recording/playback requires the simultaneous use of two tracks.
Set the TRACK SELECTOR to "STEREO".
The first stereo recording/playback occurs on tracks 1 and 3, and the second on tracks 2 and 4 after the reels have been inverted.

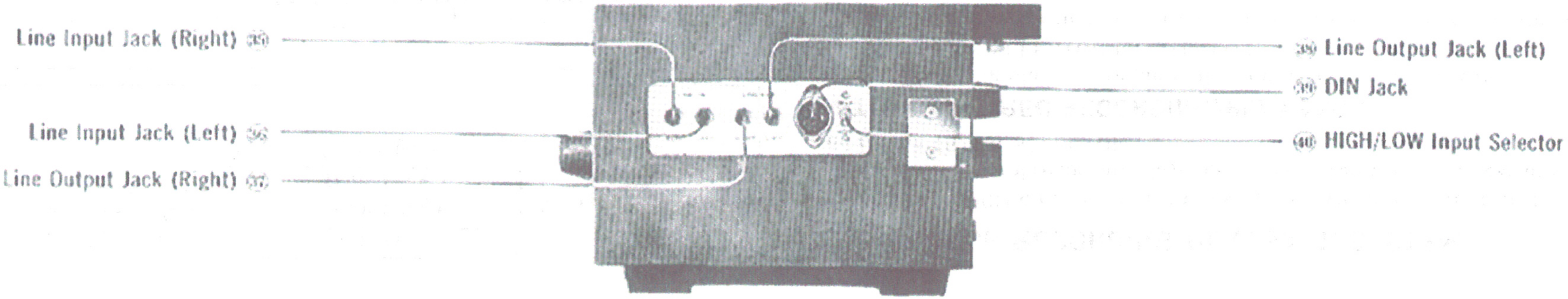

Line Input Jack (Right) ㉟
Line Input Jack (Left) ㊱
Line Output Jack (Right) ㊲
㊳ Line Output Jack (Left)
㊴ DIN Jack
㊵ HIGH/LOW Input Selector

Fig. 2

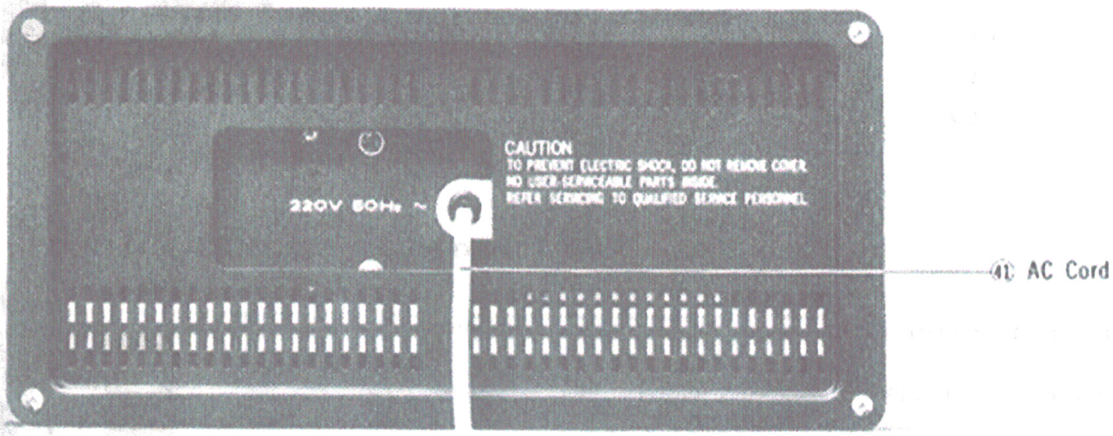

CAUTION
TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER.
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
220V 50Hz ~
㊶ AC Cord

Fig. 3

8. OPERATING PRECAUTIONS

IMPORTANT : READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE OPERATING YOUR MACHINE :

① THE USE OF NEW TAPE WILL RESULT IN THE BEST RECORDINGS.

② THE SYMPTOMS LISTED BELOW DO NOT NECESSARILY INDICATE MECHANICAL FAILURE OF YOUR TAPE DECK. IF YOUR MACHINE EXHIBITS ANY OF THESE SYMPTOMS, CHECK FOR THE TROUBLE AS INDICATED.

(1) Loss of sensitivity and tone quality may be due to :
   A. Dirty erase head. This will prevent prerecorded material from being completely erased.
   B. Dust on the recording head. Clean the head gently with a soft cotton swab soaked in rubbing alcohol or carbon tetrachloride.
   C. A.C. power voltage lower than the standard voltage to which your machine is adjusted.

(2) Irregularity in the tape transport may be due to :
   A. Grime adhering to the heads.
   B. Oil on the capstan.
   C. Sticky or dirty tape surface.
   D. Bent take-up reel.

(3) If your machine will not record, check the following for correct position.
   A. Record/Playback lever.
   B. Input plugs.

NOTE :

(1) Before operating your machine, be sure to clean the surface of the head.

(2) Unused tape may become soft and sticky. It is advisable to run the tape once from the supply reel to the take-up reel before threading it for recording.

③ THE FOLLOWING NOTES ARE PROVIDED FOR YOUR CONVENIENCE.

(1) If any trouble develops, please take your machine to the nearest authorized agent in your area or inquire at the Service Dept. of the Akai Company in Tokyo, Japan.

(2) Your Akai Model X-200D requires constant voltage for optimum performance.

(3) The standard 1.200 foot length of tape on a 7" reel plays up to 32 minutes at 7-1/2 ips speed in one direction.

(4) If the sound sources are so far away from the microphones that the volume control must be turned up to a maximum, some hum or noise will inevitably be recorded. In such instance, a test recording is recommended before attempting a final recording.

1. TAPE LOADING

Place the full reel of tape on the SUPPLY REEL SHAFT and the empty reel on the TAKE-UP REEL SHAFT.

Thread the tape as illustrated by the dotted line.

To keep the reels from failing, lock the reels with the retainers provided on the the REEL SHAFTS.

IMPORTANT :

If the automatic shut-off and automatic stop are required, thread the tape below the AUTOMATIC SHUT OFF LEVER. If not, pass the tape directly onto the take-up reel.

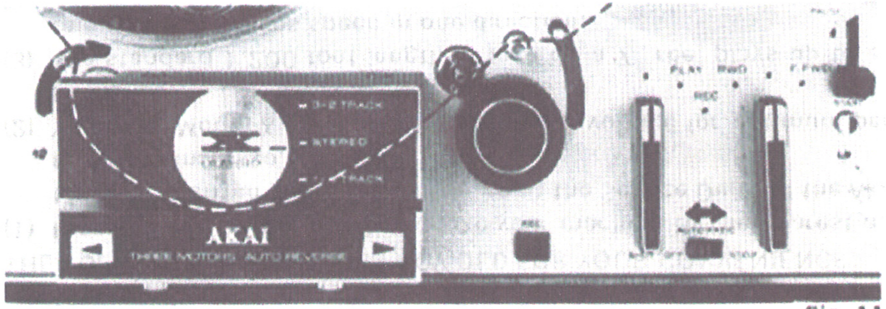

3-2 TRACK
STEREO
1/4 TRACK
AKAI
THREE MOTORS AUTO REVERSE
PLAY
RWD
F.FWD
REC
AUTOMATIC

Fig. 11

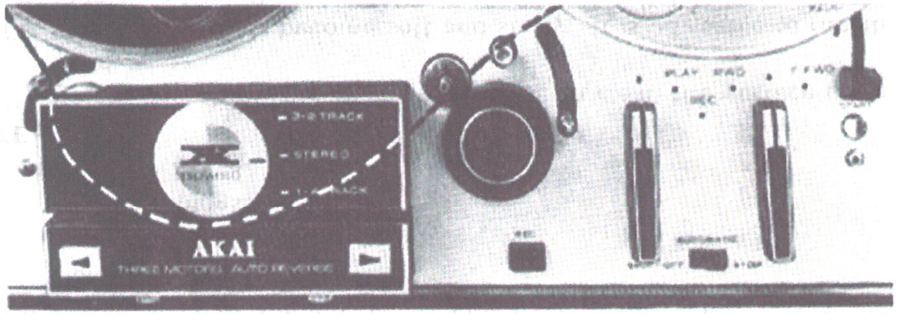

3-2 TRACK
STEREO
1/4 TRACK
AKAI
THREE MOTORS AUTO REVERSE
PLAY
RWD
F.FWD
REC
AUTOMATIC

Fig. 12

2. INSTANT STOP/PAUSE CONTROL

To momentarily stop the tape during record/playback, set the INSTANT STOP/PAUSE LEVER to "PAUSE" Position as shown Fig. 13.

The lever will be locked in the stop position and can be released by pushing the START BUTTON. The INSTANT STOP/PAUSE LEVER will not function during fast forward or rewind operation.

Use of the INSTANT STOP/PAUSE LEVER permits adjustment and balance of the recording level when the recorder is set to normal recording mode. Adjust to optimum recording level while watching the VU meters.

This control may also be used during recording to edit the tape (e.g. lift the level to stop the recorder when certain portions of the program are not desired).

Note that when the lever is released, no annoying 'click'' is impressed on the tape.

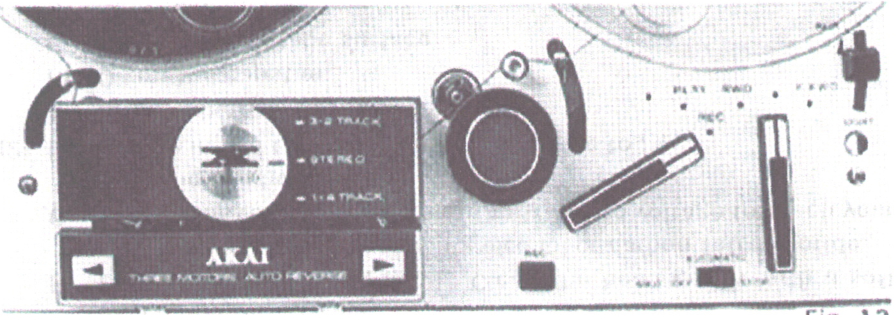

3-2 TRACK
STEREO
1/4 TRACK
AKAI
THREE MOTORS AUTO REVERSE
PLAY
RWD
F.FWD
REC
AUTOMATIC

Fig. 13

3. FAST FORWARD AND REWIND

Fast forward or rewind is performed by turning the FAST FORWARD/REWIND LEVER to the proper position. Fast forward or rewind permits rapid selection of recordings on the tape. The FAST FORWARD/REWIND LEVER cannot be turned out of the stop position unless the RECORD/PLAYBACK LEVER is in its stop position, and vice-versa.

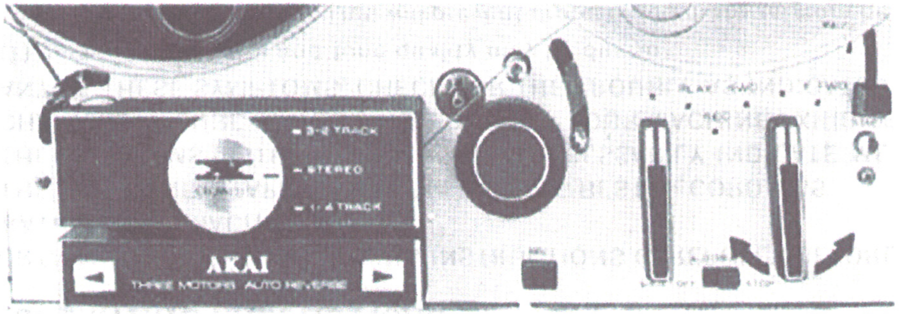

3-2 TRACK
STEREO
1/4 TRACK
AKAI
THREE MOTORS AUTO REVERSE
PLAY
RWD
F.FWD
REC

Fig. 14

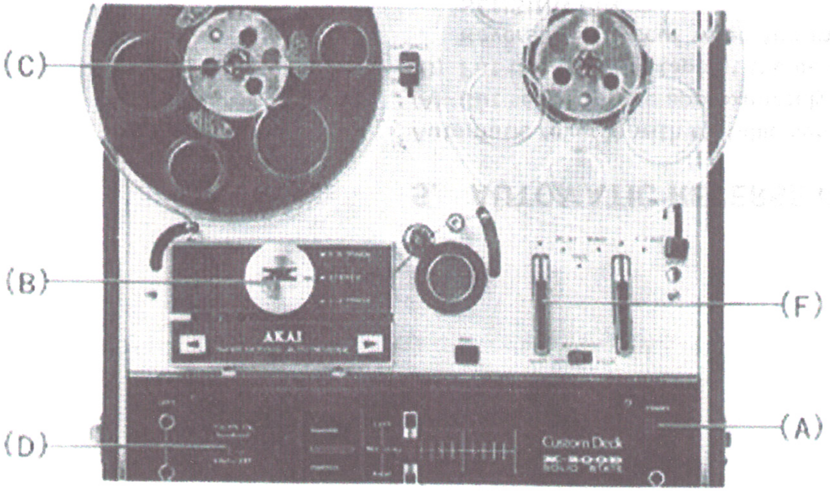
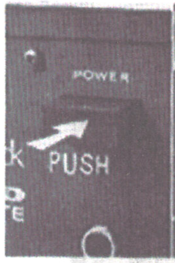
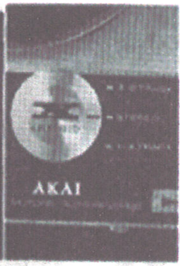

(C)
(B)
(F)
(D)
(A)
AKAI
Custom Deck
X-200D
SOLID STATE

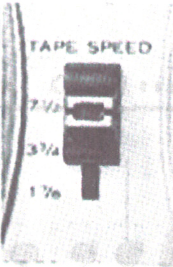
Fig. 15



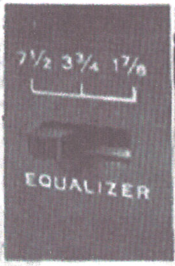
(A)



(B)

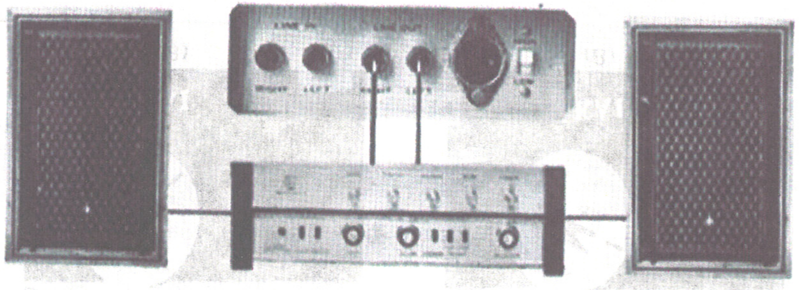

TAPE SPEED
7½
3¾
1⅞

(C)


7½ 3¾ 1⅞
EQUALIZER

(D)

(F)


LINE IN
LINE OUT
RIGHT
LEFT

(E)

4. PLAYBACK

STEREO

Connect the recorder to AC power source with the attached AC CORD and load the tape.

(A) Push POWER SWITCH.
(B) Set TRACK SELECTOR to "STEREO".
(C) Select the desired tape speed by TAPE SPEED SELECTOR.
(D) Set EQUALIZER SWITCH to 7-1/2, 3-3/4 or 1-7/8 ips, whichever is consistent with tape speed.

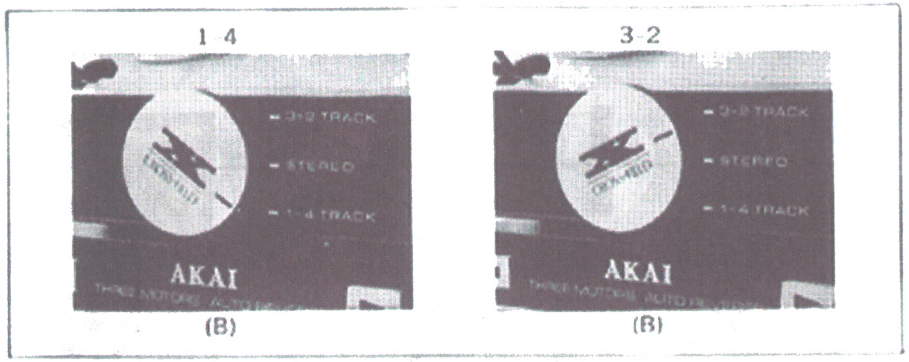
The Model X-200D does not include a power amplifier or loudspeakers. It, therefore, is necessary to provide an external stereo amplifier and speakers for stereophonic playback.

(E) Connect both LINE OUTPUT JACKS (LEFT and RIGHT) to TAPE INPUT JACKS or AUX INPUT JACKS of the external amplifier. Connect two loudspeakers to the power amplifier.

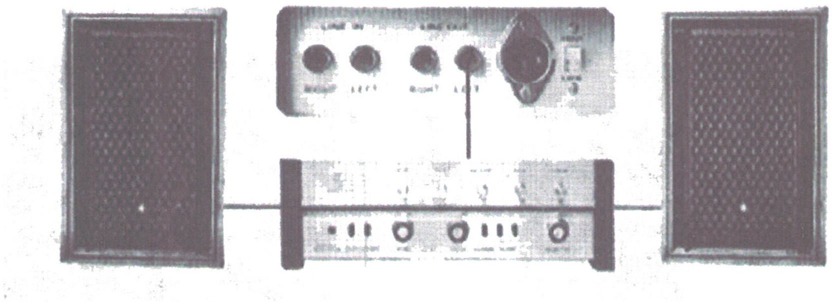
IMPORTANT

The output level at the X-200D's output jack is 1.23 V maximum. Check your amplifier before operation with input terminals.

(F) Set RECORD/PLAYBACK LEVER to "PLAY".
(G) Adjust the volume of sound by using the volume control knob of the external amplifier.



(B) (B)



(E)

MONAURAL

For monaural playback, substitute the following steps (B) and (E) of the stereo procedure, and add step (H). Follow the rest of the stereo procedure.

Playback on tracks 1 and 4

Only the left channel amplifier is used for monaural playback on tracks 1 and 4.

(B) Set TRACK SELECTOR to "1 4".

(E) Connect LINE OUTPUT JACK (LEFT) to TAPE INPUT JACK (LEFT) or AUX INPUT JACK (LEFT) of the external amplifier.

(H) Invert the reel to playback on track 4.

Playback on tracks 3 and 2

Only the left channel amplifier is used for monaural playback on tracks 3 and 2.

(B) Set TRACK SELECTOR to "3 2".

(E) Connect LINE OUTPUT JACK (LEFT) to TAPE INPUT JACK (LEFT) or AUX INPUT JACK (LEFT) of the external amplifier.

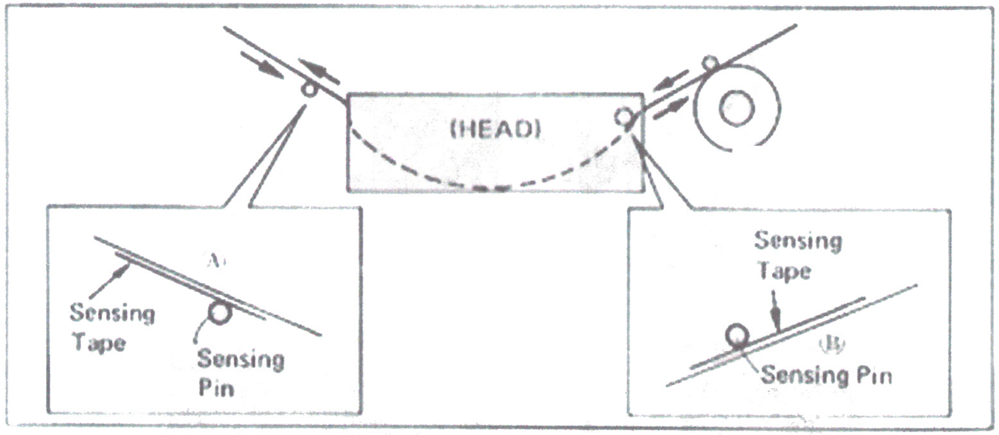
(H) Invert the reel to playback on track 2.

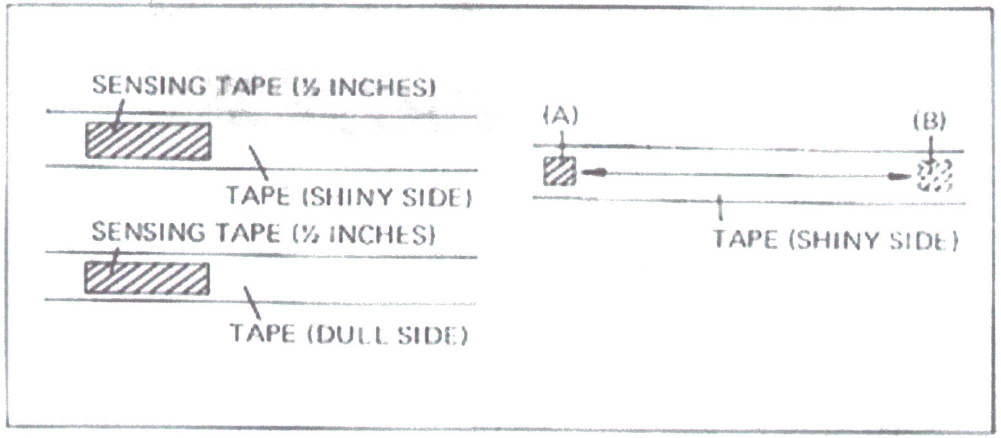
5. AUTOMATIC REVERSE (METALLIC SENSING TAPE)

Automatic reverse with metallic sensing tape is used for playback only.

(A) Cut sensing tape approximately 1/2 inches.

(B) Put this sensing tape at the desired reverse point of the tape in use. Reversal will occur when the metallic sensing tape makes contact with SENSING PIN.


(HEAD)
(A)
Sensing Tape
Sensing Pin
Sensing Tape
(B)
Sensing Pin


SENSING TAPE (½ INCHES)
TAPE (SHINY SIDE)
SENSING TAPE (½ INCHES)
TAPE (DULL SIDE)
(A)
(B)
TAPE (SHINY SIDE)

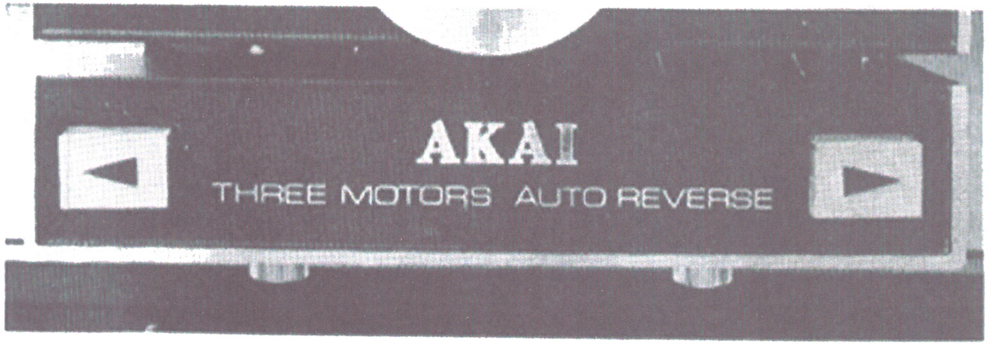

AKAI
THREE MOTORS AUTO REVERSE

Fig. 16

(C) If you put sensing tape at the desired reverse point A on shiny side of the tape in use, the tape direction (→) will automatically reverse and play in the opposite direction (←).

(D) If you put metallic sensing tape at the desired reverse point B on dull side of the tape in use, the tape direction (←) will automatically reverse and play in the opposite direction (→).

(E) So, if you put two pieces of metallic sensing tape at the desired points A and B simultaneously, the X-200D will give continuous playback in both direction between A and B.

NOTE : If the sensing tape is dirty, the proper reverse operation of the tape will not be made.

6. MANUAL REVERSE

Pushing MANUAL REVERSE BUTTONS will put the X-200D into the reverse (playback) function.

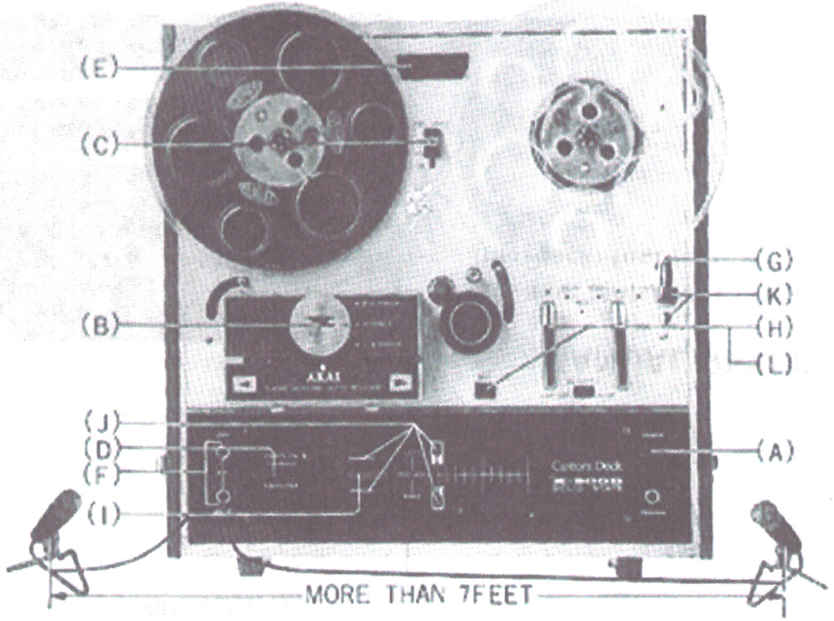
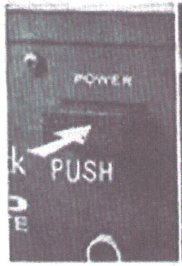
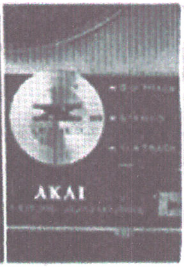

(E)
(C)
(B)
(J)
(D)
(F)
(I)
(G)
(K)
(H)
(L)
(A)
AKAI
MORE THAN 7FEET

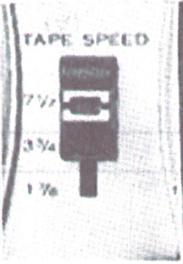
Fig. 17



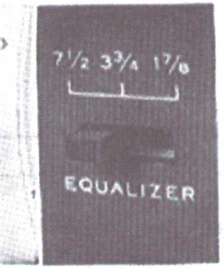
(A)



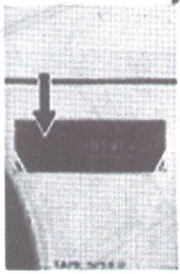
(B)


TAPE SPEED
7½
3¾
1⅞

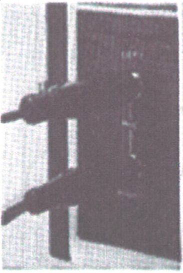
(C)


7½ 3¾ 1⅞
EQUALIZER

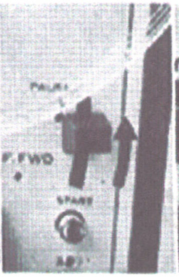
(D)



(E)



(F)


PAUSE
F.FWD
SPARE

(G)

(H)

7. RECORDING

STEREO

(A) Push POWER SWITCH.

(B) Set TRACK SELECTOR to "STEREO".

(C) Select the desired tape speed by TAPE SPEED SELECTOR.

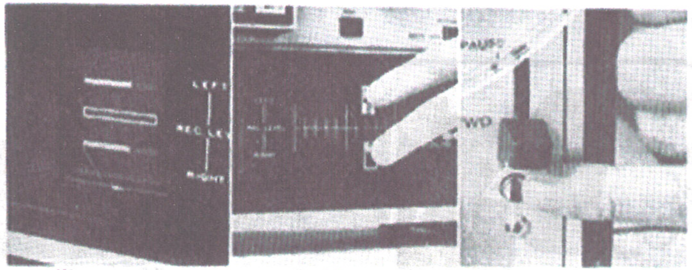
(D) Set EQUALIZER SWITCH to 7-1/2, 3-3/4 or 1-7/8 ips, whichever is consistent with tape speed.

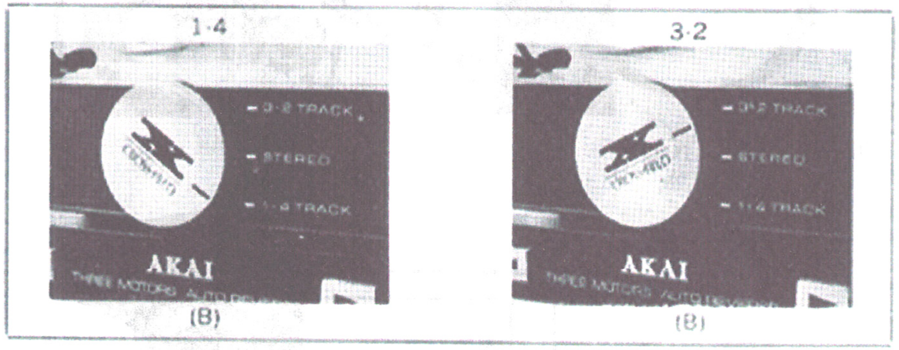
(E) Set RESET BUTTON and set INDEX COUNTER to "0000".
This INDEX COUNTER provides a reference for locating any position on the tape.

(F) Insert microphone plugs into MICROPHONE JACKS (LEFT and RIGHT).
Maintain a distance of at least seven feet between the microphones.

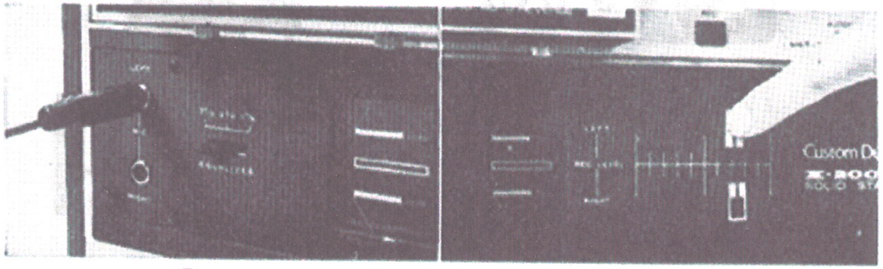
(G) Push INSTANT STOP/PAUSE LEVER upward until it locks.

(H) Turn RECORD/PLAYBACK LEVER to "REC" position while depressing RECORD INTERLOCK BUTTON.


(I) (J) (K)



(B) (B)


(F) (J)

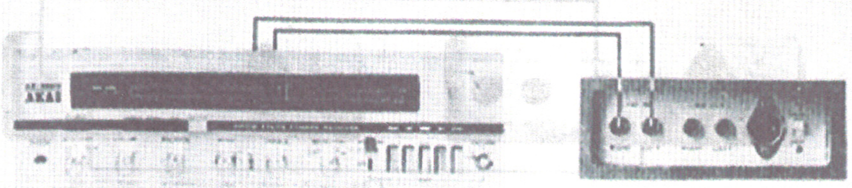


Fig. 18

(I) Check RECORD INDICATOR LAMP is on.
If the lamp is not on, the X-200D will not record.

(J) Microphone volume level may be adjusted and balanced by RECORD LEVEL CONTROLS (LEFT and RIGHT). Normal recording should not exceed the white zone on VU METERS (LEFT and RIGHT).

(K) After optimum recording level is determined, push START BUTTON and release INSTANT STOP/PAUSE LEVER to start stereo recording.

(L) To stop recording, return RECORD/PLAYBACK LEVER while depressing RECORD SAFETY BUTTON.

MONAURAL

For monaural recording, substitute the following steps (B), (F) and (J) of the stereo procedure, and add step (M). Follow the rest of the stereo procedure.

Recording on tracks 1 and 4

Only the left channel amplifier is used for monaural recording on tracks 1 and 4.

(B) Set TRACK SELECTOR to "1·4".

(F) Insert microphone plug into MICROPHONE JACK (LEFT).

(J) Microphone volume level may be adjusted and balanced by RECORD LEVEL CONTROL (LEFT), while observing VU METER (LEFT).

(M) Invert the reel to record on track 4.

Recording on tracks 3 and 2

Only the left channel amplifier is used for monaural recording on tracks 3 and 2.

(B) Set TRACK SELECTOR to "3·2".

(F) Insert microphone plug into MICROPHONE JACK (LEFT).

(J) Microphone volume level may be adjusted and balanced by RECORD LEVEL CONTROL (LEFT), while observing VU METER (LEFT).

(M) Invert the reel to record on track 2.

FROM AN EXTERNAL AMPLIFIER

If an external amplifier or tuner-amplifier combination is used, connect TAPE OUTPUT leads of the external amplifier to LINE INPUT JACKS (LEFT and RIGHT) in step (F) of the recording procedure.

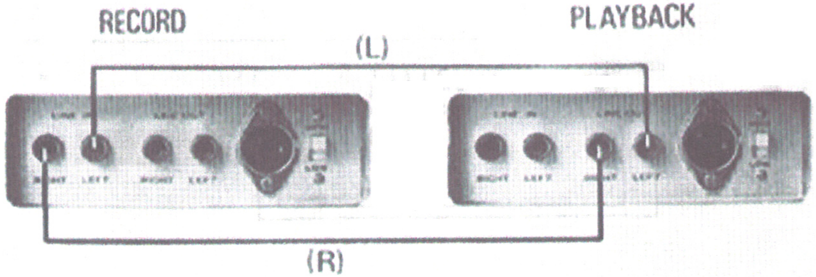


Fig. 19

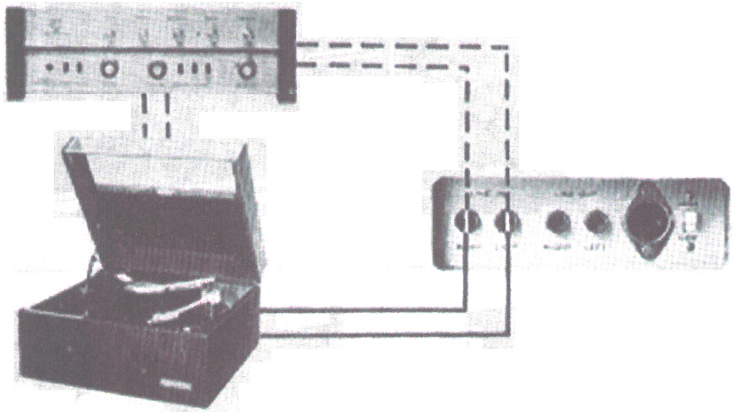


Fig. 20

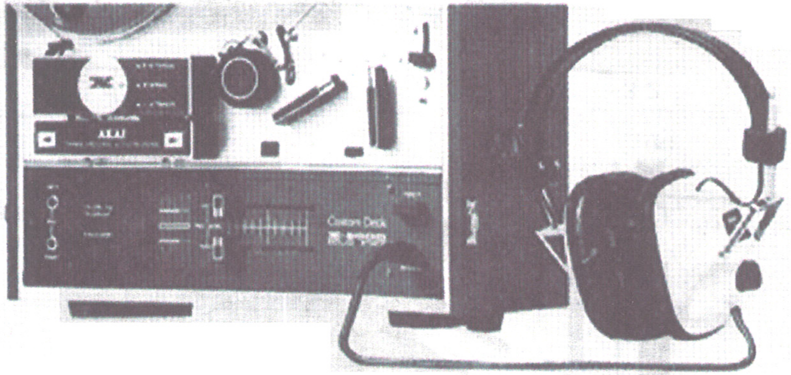


Fig. 21

FROM ANOTHER TAPE RECORDER

Connect LINE OUTPUT JACKS or EXTERNAL SPEAKER JACKS of the playback machine to LINE INPUT JACKS (LEFT and RIGHT) of the record machine in step (F) of the recording procedure.

FROM DISCS

To record from a stereo or monaural disc, a "CRYSTAL PICK UP" or a "CERAMIC PICK UP" can be directly connected to LINE INPUT JACKS (LEFT and RIGHT) in step (F) of the recording procedure. If a "MAGNETIC CARTRIDGE" is used it must be connected to a separate pre-amplifier or external amplifier before being connected to LINE INPUT JACKS (LEFT and RIGHT).

8. MONITORING

Monitoring is performed by connecting stereo headphones to the STEREO HEADPHONE JACK.

On monaural as well as stereo recording, please use stereo headphones.

CAUTION: The stereo headphones should be of low impedance type (8 ohms).

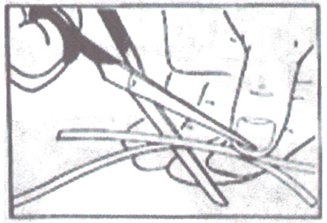
9. TAPE SPLICING AND EDITING

Superimpose the tapes and cut them diagonally as illustrated in Figures. Cutting on the diagonal eliminates the "click" or "pop" sound in recording/playback.

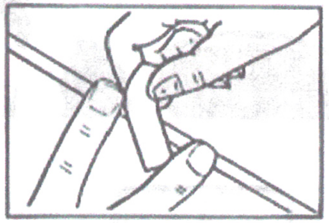
Match the aligned ends and apply splicing tape to the glossy side.

Firmly press the splice with fingers to secure the ends evenly. Trim off excess splicing tape (cut into the recording tape very slightly as illustrated by the dotted lines—this eliminates the possibility of a sticky splice.) Because tape splicing with scissors is difficult and requires much skill, it is recommended that our specially designed portable splicer be used to ensure professional results.

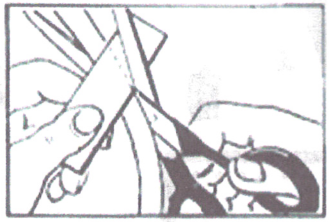
(1)

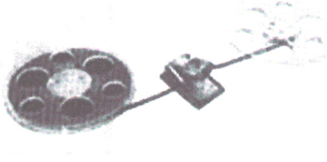


(2)



(3)





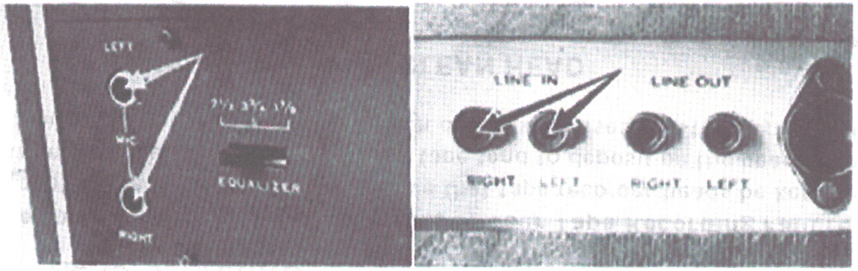


Fig. 22

10. TAPE ERASING

Any signals previously recorded on a tape will be automatically erased as a new recording is made. For erasing only, load the tape and set the recorder to the normal record position. No plugs should be connected to the **LINE INPUT JACKS (LEFT and RIGHT)** or the **MICROPHONE JACKS (LEFT and RIGHT)**. A Bulk Tape Eraser should be used for quick and complete erasing.

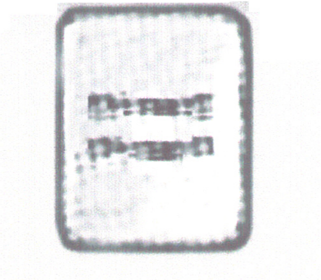
11. HEAD CLEANING

Tape Oxide/Dust Deposits Cause 90% of Your Tape Recording Failure
For quality performance it is imperative that tape recorder heads be kept clean at all times.
Dust and magnetic particles from the tape tend to deposit on the heads after prolonged use of the recorder. This results in poor head-to-tape contact deteriorating sound quality and sensitivity. Such dust also causes drastic drops in recording/playback levels and affects high quality sound.

EXAMPLE

CLEAN HEAD

Frequency response curve



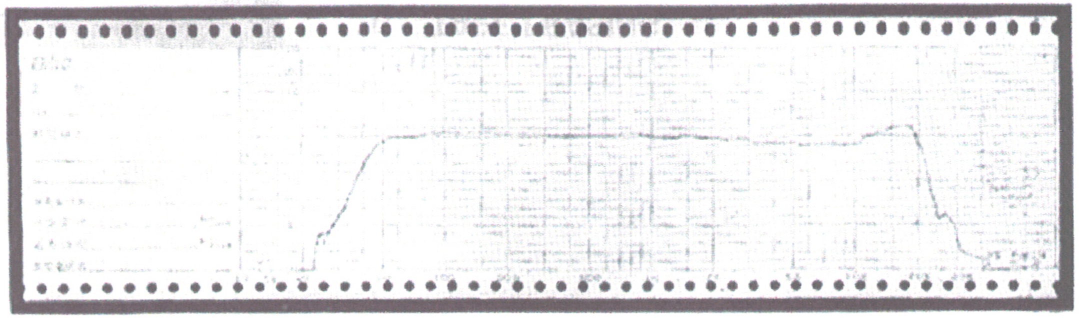
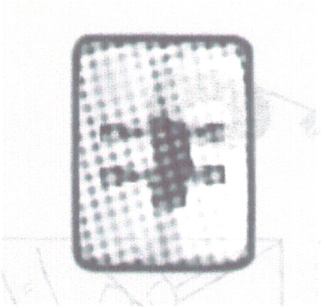


Fig. 23

DUSTY HEAD



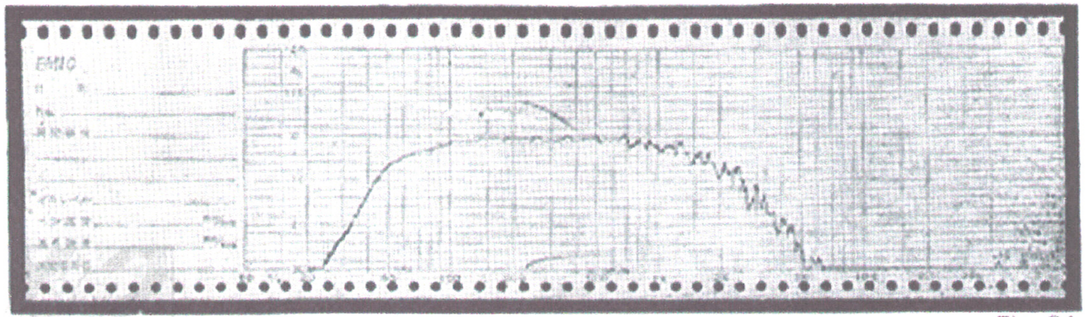


Fig. 24

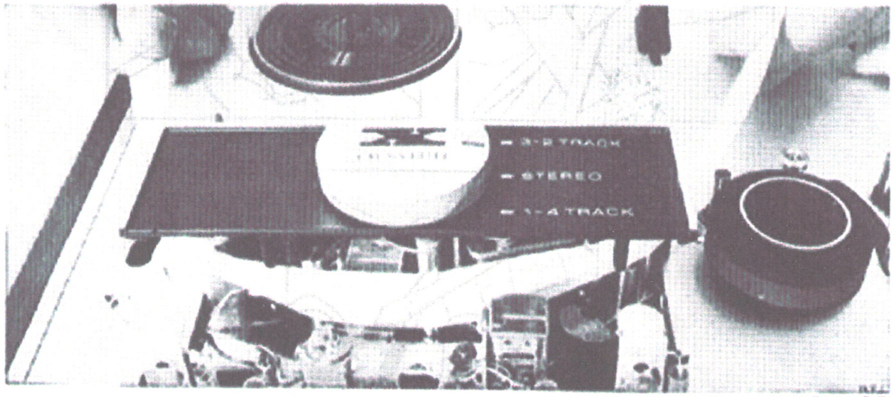


Fig. 25

Make it a rule to clean the heads every time you use your tape recorder. AKAI's Head Cleaning Kit (Accessory NO. HC-500) is recommended for removing foreign matter deposited on the heads. If this kit is not available, use alcohol.

NOTE: Clean the heads after setting the RECORD/PLAYBACK LEVER to "PLAY".

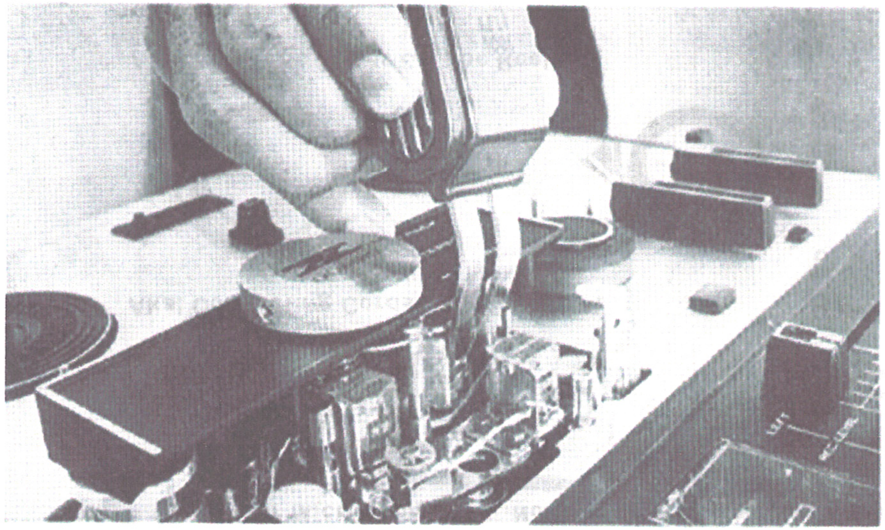


Fig. 26

12. HEAD DEMAGNETIZING

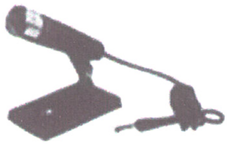
Normally the steel pole pieces which form a part of the recording and playback heads become slightly magnetized. The effect of slight head magnetization is that it partially erases the tape, especially at high frequencies. Generally, this condition can be detected by the loss of high frequency response which cannot be corrected through head alignment. Severe magnetization (which may be caused by using magnetized tools in the vicinity of the heads) will result in noise or considerable distortion in addition to the loss of high frequency response. Although Model X-200D already has a built-in Head Demagnetizing Circuit, it is recommended that head demagnetization be performed periodically. This can be accomplished by touching the head lightly with the demagnetizer and making several small circular motions over all head surface areas as well as the head housing.

Note: To avoid scratching the head surface, we suggest that you cover both prongs of the head demagnetizer with a sort of masking tape.

[illegible]. ACCESSORIES

1. OPTIONAL ACCESSORIES

Dynamic Microphone **No. DM-13**

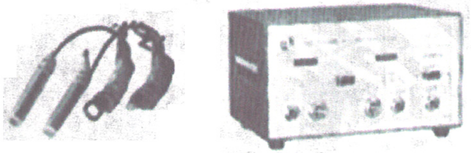


Tape Eraser **No. ATE-7**

Tape Splicer **No AS-3**

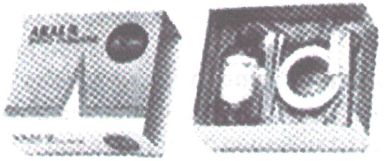
Stereo Headphones **No. ASE-9S**

Condenser Microphones **No. CM-15**



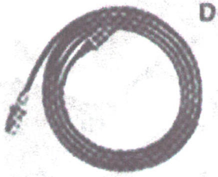
Head Demagnetizer **No. AH-6**

Head Cleaning Kit **No. HC-500**

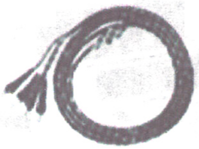


Akai Connecting Cords

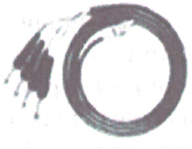
D-100



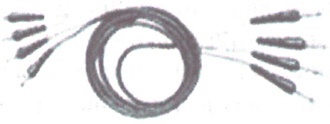
DR-110



DM-120



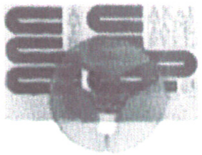
RM-130



Akai Magnetic Tapes & Tape Reels

AKAI Magnetic Tape

AT-5S	(600 foot)
AT-7S	(1,200 foot)
AT-10S	(2,400 foot)
AT-5L	(900 foot)
AT-7L	(1,800 foot)
AT-10L	(3,600 foot)



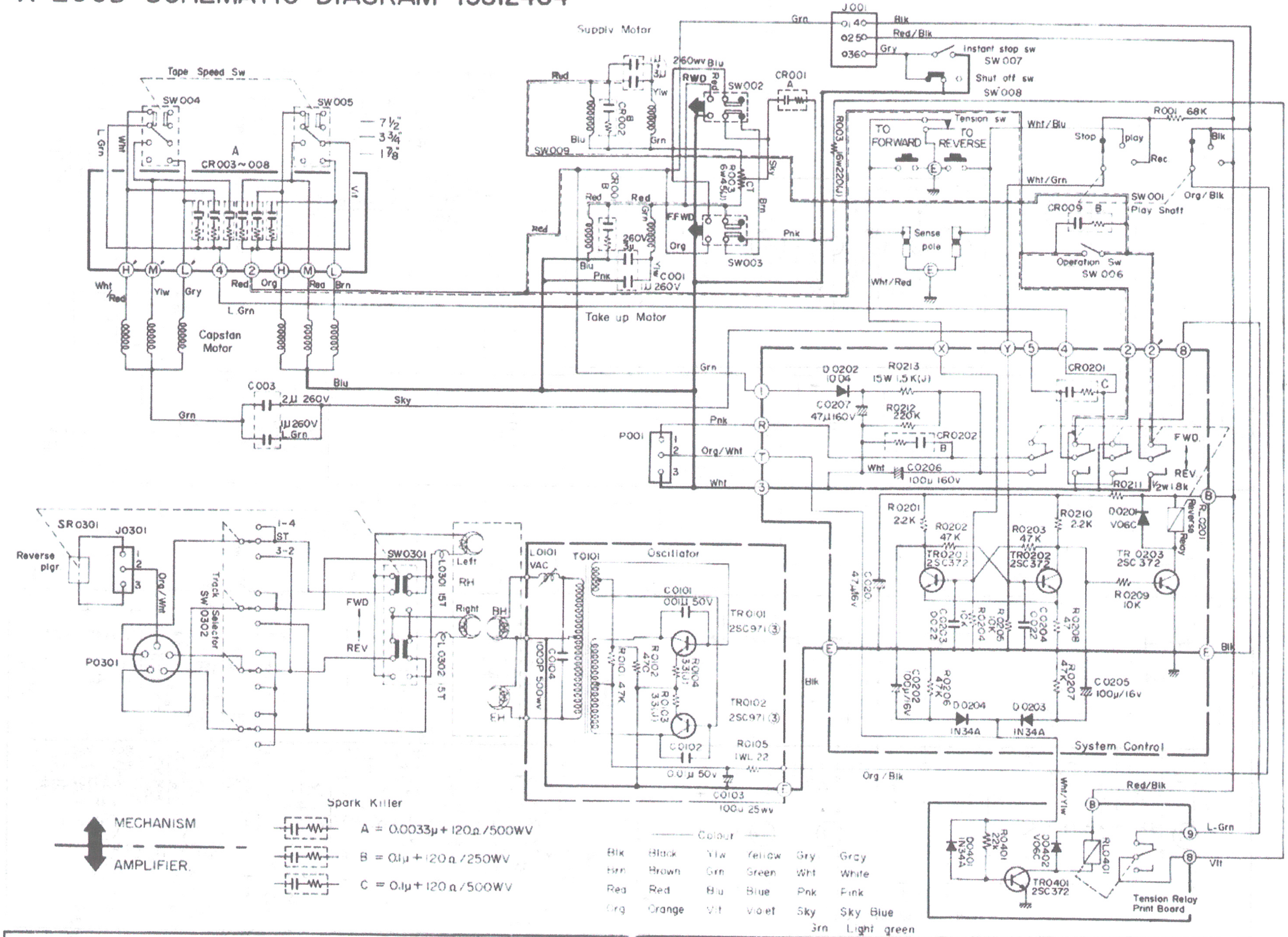
AKAI Tape Reel

ATR-5	(for 5")
ATR-7	(for 7")
ATR-10	(for 10-1/2")

2. STANDARD ACCESSORIES

Connection cord	1
Sensing Tape	1
Spare Fuse	2
Operator's Manual	1

X-200D SCHEMATIC DIAGRAM 13812484


Supply Motor
J001
Grn
Blk
Red/Blk
Gry
Instant stop sw
SW007
Shut off sw
SW008
Tape Speed Sw
SW004
SW005
7 1/2"
3 3/4"
1 7/8"
A
CR003~008
L Grn
Wht
Vlt
Red
2µ 260wv
3µ
Blu
Ylw
RWD
Red
SW002
CR001
A
CR002
B
Grn
SW009
R003 6w 220(J)
R003 6w 45(J)
CT
Sky
Brn
Tension sw
TO FORWARD
TO REVERSE
E
Wht/Blu
R001 68K
Stop
play
Rec
Blk
Wht/Grn
SW001
Play Shaft
Org/Blk
CR009 B
Operation Sw
SW006
CR001 B
FFWD
Org
SW003
Pnk
260V
3µ
C001
1µ 260V
Sense pole
Wht/Red
Take up Motor
H
M
L
4
2
Wht/Red
Ylw
Gry
Red
Org
Brn
L Grn
Capstan Motor
C003
2µ 260V
1µ 260V
L Grn
Blu
Sky
Grn
P001
1
2
3
Org/Wht
Wht
X
Y
5
8
I
R
T
3
D0202
1004
R0213
15W 1.5K(J)
C0207
47µ 160V
R0212
220K
CR0201
C
CR0202
B
C0206
100µ 160V
FWD.
REV.
R0211
1/2w 1.8k
R0201
2.2K
R0202
47K
TR0201
2SC372
R0203
47K
TR0202
2SC372
R0210
2.2K
D0201
V06C
RL0201
Reverse Relay
TR0203
2SC372
R0209
10K
C0201
47µ 16v
C0203
0.022
R0204
10K
R0205
10K
C0204
0.022
R0208
47
E
F
Blk
C0202
100µ/16v
R0206
47K
R0207
47K
C0205
100µ/16v
D0204
1N34A
D0203
1N34A
System Control
SR0301
J0301
Reverse plgr
P0301
1-4
ST
3-2
Track Selector
SW0302
SW0301
FWD
REV
L0301 15T
L0302 15T
Left
RH
Right
BH
EH
L0101
VAC
T0101
Oscillator
C0101
0.001µ 50V
TR0101
2SC971 ③
R0101 4.7K
R0102 47K
R0104 3.3(J)
R0103 3.3(J)
TR0102
2SC971 ③
C0102
R0105
1WL 22
C0104
1000P 500wv
0.01µ 50v
C0103
100µ 25wv
Org/Blk
Wht/Ylw
Red/Blk
B
9
8
L-Grn
Vlt
D0401
1N34A
R0401
22K
D0402
V06C
RL0401
TR0401
2SC372
Tension Relay Print Board
MECHANISM
AMPLIFIER
Spark Killer

A = 0.0033µ + 120Ω /500WV

B = 0.1µ + 120Ω /250WV

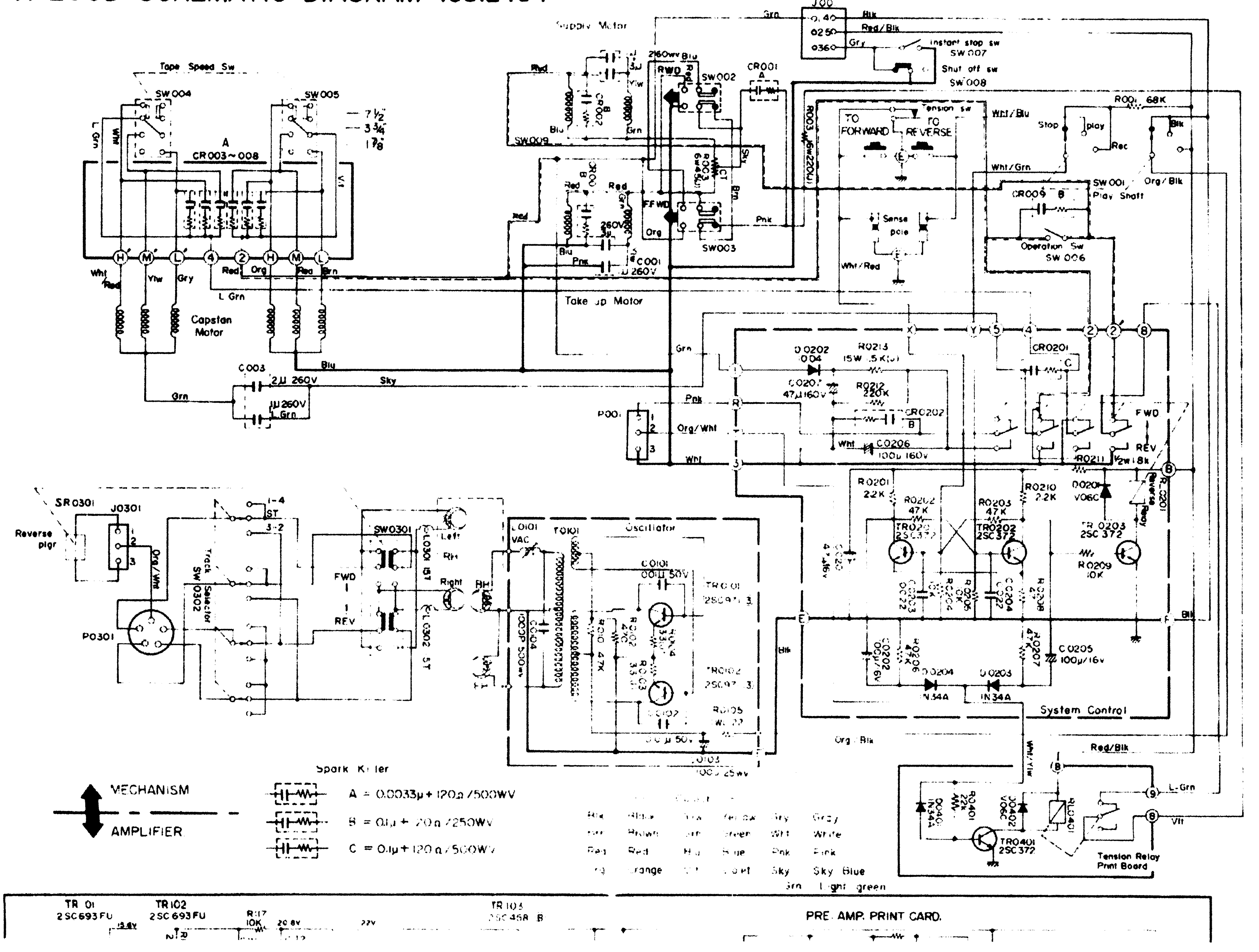
C = 0.1µ + 120Ω /500WV

Colour

Blk	Black	Ylw	Yellow	Gry	Grey
Brn	Brown	Grn	Green	Wht	White
Red	Red	Blu	Blue	Pnk	Pink
Org	Orange	Vlt	Violet	Sky	Sky Blue
				Grn	Light green

TR101
2SC693FU
TR102
2SC693FU
R117
10K
15.6V
20.8V
22V
TR103
2SC458 Ⓑ
PRE. AMP. PRINT CARD.

X-200D SCHEMATIC DIAGRAM 13812484


Supply Motor
Tape Speed Sw
SW004
SW005
7½
3¾
1⅞
A
CR003~008
Capstan Motor
C003
2μ 260V
1μ 260V
Take up Motor
C001
1μ 260V
SW009
RWD
FFWD
SW002
SW003
CR001
R003 6w45Ω
R003 6w220Ω
J00
instant stop sw SW007
Shut off sw SW008
Tension sw
TO FORWARD
TO REVERSE
Sense pole
Stop
play
Rec
SW001 Play Shaft
CR009 B
Operation Sw SW006
R001 68K
P001
CR0201
D0202 0.04
R0213 15W 1.5K
C0207 47μ 160V
R0212 220K
CR0202 B
C0206 100μ 160V
FWD
REV
R0211 ½w 1.8k
R0201 2.2K
R0202 47K
TR0201 2SC372
R0203 47K
TR0202 2SC372
R0210 2.2K
D0201 V06C
TR0203 2SC372
R0209 10K
Relay
C0202 100μ/6V
R0206 47K
D0204 IN34A
D0203 IN34A
R0207 47K
C0205 100μ/16V
System Control
SR0301
J0301
Reverse plgr
P0301
Track Selector SW0302
SW0301
L0301 15T
L0302 5T
Left
Right
L0101
VAC
T0101
Oscillator
C0101 001μ 50V
TR0101 2SC913
TR0102 2SC913
C0104 1000P 500wv
C0102
R0105
C0103 100μ 25wv
D0401 IN34A
R0401 22k
D0402 V06C
RL0401
TR0401 2SC372
Tension Relay Print Board
Red/Blk
L-Grn
Vlt
Org/Blk
Wht/Ylw
TR101 2SC693FU
TR102 2SC693FU
R117 10K
TR103 2SC458 B
PRE. AMP. PRINT CARD.

MECHANISM

AMPLIFIER

Spark Killer

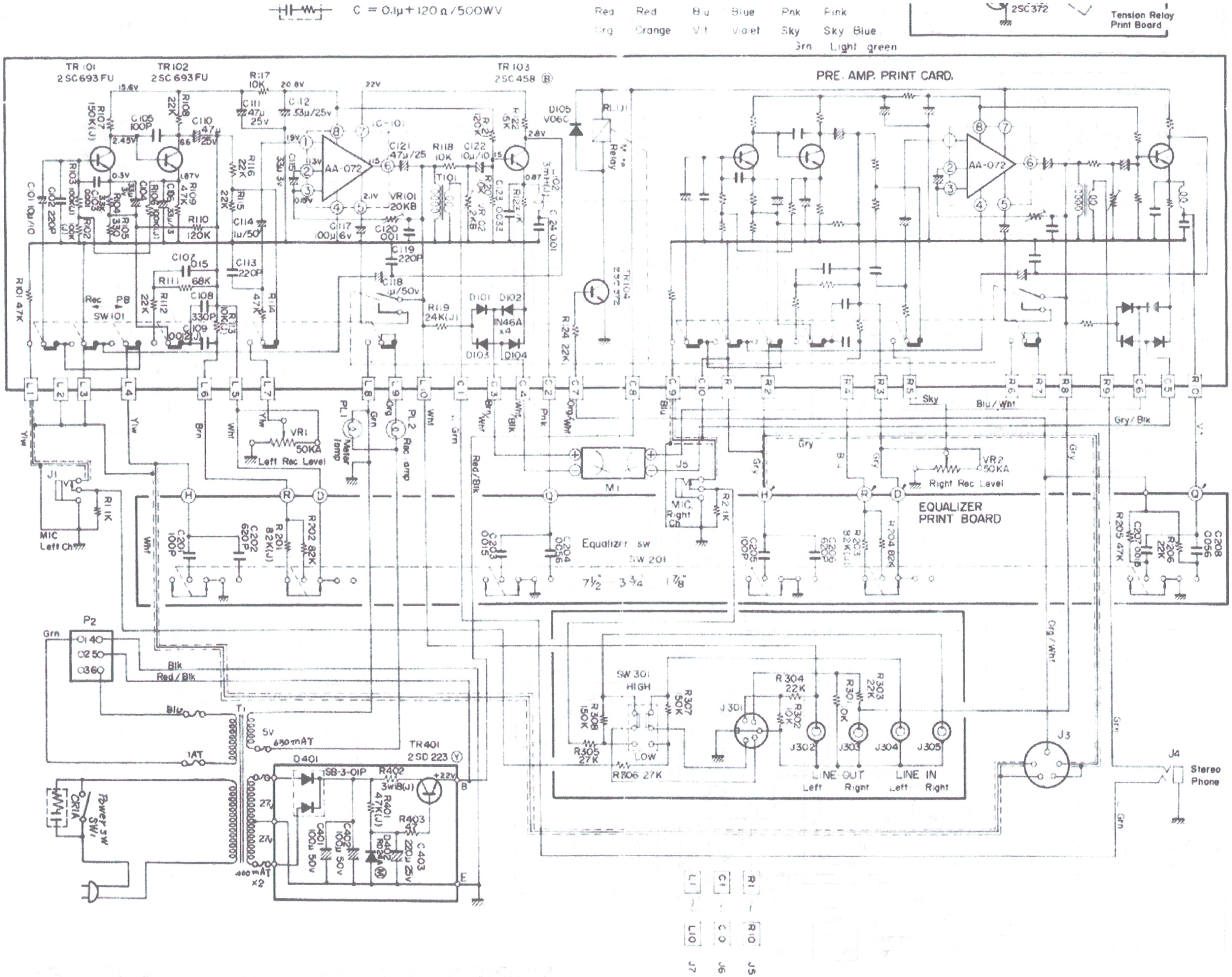
A = 0.0033μ + 120Ω / 500WV

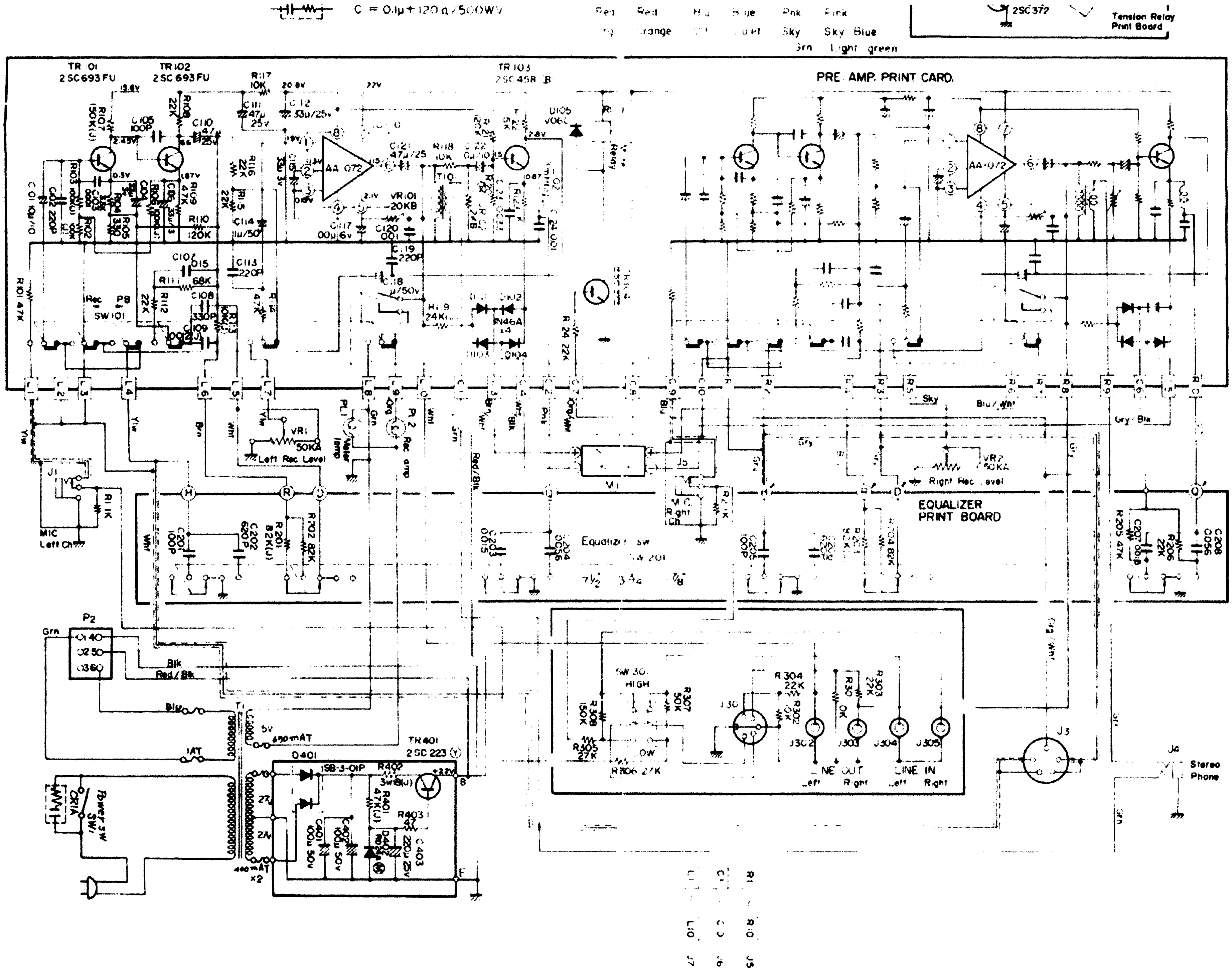
B = 0.1μ + 120Ω / 250WV

C = 0.1μ + 120Ω / 500WV

Color Code

Blk	Black	Ylw	Yellow	Gry	Gray
Brn	Brown	Grn	Green	Wht	White
Red	Red	Blu	Blue	Pnk	Pink
Org	Orange	Vlt	Violet	Sky	Sky Blue
				L Grn	Light green


C = 0.1μ + 120Ω/500WV
Red Red
Org Orange
Blu Blue
Vlt Violet
Pnk Pink
Sky Sky Blue
Grn Light green
2SC372
Tension Relay Print Board
PRE. AMP. PRINT CARD.
TR101 2SC693FU
TR102 2SC693FU
TR103 2SC458 Ⓑ
IC-101
AA-072
R117 10K
C111 47μ 25v
C112 33μ/25v
R107 150K(J)
C105 100P
R108 22K
C110 47μ 25v
R116 22K
R115 22K
C121 47μ/25
R118 10K
C122 10μ/10
R122 15K
T101
VR101 20KB
C117 100μ 6v
C120 .001
C119 220P
C118 1μ/50v
R119 24K(J)
D105 V06C
RL101 Relay
TR104 2SC372
R124 22K
C101 10μ/10
C102 220P
R103 100K(J)
R104 330
R105 330
R109 47K
R110 120K
C114 1μ/50
C107 .015
R111 68K
C113 220P
C108 330P
C109 .002(J)
R112 22K
R113 10K(J)
R114 47K
R101 47K
Rec PB
SW101
D101 D102
IN46A x4
D103 D104
L1 L2 L3 L4 L6 L5 L7 L8 L9 L10 C1 C3 C4 C2 C7 C8 C9 C10 R1 R2 R4 R3 R5 R6 R7 R8 R9 C6 C5 R10
Ylw
Brn
Wht
VR1 50KA
Left Rec Level
PL1 Meter lamp
PL2 Rec lamp
Red/Blk
Pnk
Org/Wht
Blu
Sky
Blu/Wht
Gry/Blk
Gry
M1
J5
MIC. Right Ch
R21 1K
VR2 50KA
Right Rec Level
J1
R11 1K
MIC Left Ch
EQUALIZER PRINT BOARD
C201 100P
C202 620P
R201 82K(J)
R202 82K
C203 .0015
C204 .0056
Equalizer sw
SW201
7½ 3¾ 1⅞
C205 100P
C206 620P
R203 82K(J)
R204 82K
R205 47K
C207 .0015
R206 22K
C208 .0056
P2
Grn
Blk
Red/Blk
Blu
T1
5v
650mAT
1AT
Power sw SW1
CR1A
TR401 2SD223 Ⓨ
D401 1SB-3-01P
R402 3W8(J)
+22V
R401 47K(J)
R403 47
C401 100μ 50v
C402 100μ 50v
D402 RD24
C403 220μ 25v
27v
27v
400mAT x2
B
E
SW301 HIGH LOW
R308 150K
R307 50K
R305 27K
R306 27K
J301
R304 22K
R302 10K
R301 10K
R303 22K
J302 J303 J304 J305
LINE OUT Left Right
LINE IN Left Right
Org/Wht
J3
J4
Stereo Phone
L1 L10 J7
C1 C10 J6
R1 R10 J5


C = 0.1μ + 120Ω/500WV
Red Red
Blu Blue
Pnk Pink
Org Orange
Sky Sky Blue
Grn Light green
2SC372
Tension Relay Print Board
PRE. AMP. PRINT CARD.
TR101 2SC693FU
TR102 2SC693FU
TR103 2SC458 (B)
R107 150K(J)
C105 100P
R108 22K
C110 47μ 25V
R117 10K
C111 47μ 25V
C112 33μ/25V
AA 072
AA-072
C121 47μ/25
R118 10K
C122 0.1μ/10
D105 V06C
Relay
VR101 20KB
C117 00μ 6V
C120 .001
C119 220P
C114 1μ/50
C113 220P
R109 47K
R110 120K
R116 22K
R115 22K
C101 10μ/10
C102 220P
R101 47K
C107 .015
R111 68K
R112 22K
C108 330P
C109
R113 10K
Rec PB
SW101
C118 1μ/50V
R119 24K
D101 D102
IN46A x4
D103 D104
R124 22K
L1 L2 L3 L4 L6 L5 L7 L8 L9
Yiw
Brn
Wht
Grn
Org
PL1 Meter lamp
PL2 Rec amp
VR1 50KA
Left Rec Level
Red/Blk
Blk
Pnk
Blu
Sky
Blu/Wht
Gry/Blk
Gry
M1
J5
VR2 50KA
Right Rec Level
J1
R11 1K
MIC Left Ch
MIC Right Ch
R21 1K
EQUALIZER PRINT BOARD
C201 100P
C202 620P
R201 82K(J)
R202 82K
C203 .015
C204 .0056
Equalizer sw
SW201
7½ 3¾ 1⅞
C205 100P
R204 82K
R205 47K
C207 .018
R206 22K
C208 .0056
P2
Grn
Blk
Red/Blk
Blu
T1
1AT
5V
650mAT
Power SW SW1
CR1A
D401
1SB-3-01P
R402 3W18(J)
TR401 2SC223 (Y)
+22V
B
E
27V
27V
R401 47K(J)
C401 100μ 50V
C402 100μ 50V
D402
R403 47
C403 220μ 25V
450mAT x2
SW301 HIGH
LOW
R308 150K
R305 27K
R306 27K
R307 50K
J301
R304 22K
R302 10K
R301 10K
R303 22K
J302 J303 J304 J305
LINE OUT Left Right
LINE IN Left Right
J3
J4
Stereo Phone
Gry/Wht
L1 C1 R1
L10 C10 R10
J7 J6 J5